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Dear Sir:

A new plant to produce certain of the processing chemicals used at Hanford Plutonium Works, Washington, will be erected at nearby Kennewick, Washington, by General Chemicals Division of Allied Chemical and Dye Corporation, N.Y. Work on the plant will begin before the first of next year; surveyors are now engaged on the site which has been acquired. Operations will be conducted under terms of a contract negotiated with Allied Chemical by the AEC some six months ago.

The nation's first nuclear research project which is completely free of government control--the University of Michigan's $6.5 million "Phoenix Project"--has already made its first grants. In the natural sciences, financial support is now being given at Michigan to an isotope laboratory for handling radioactive materials; to studies in the dating of soil samples by measurement of naturally occurring carbon-14; to investigations into the nature of rubidium-87, particularly its nuclear energy dissipation; and to studies of high-energy cosmic rays, and ion exchange resins. Additionally, in political science, a grant has been made at Michigan to study the activities of Congress in maintaining legislative direction and control over the development of the nation's atomic energy program.....Dr. Alexander G. Ruthven, University of Michigan president, explained in Ann Arbor last week some of the prime objectives of this Michigan Memorial-Phoenix Project, as it is formally known. He spoke at the opening of the drive to raise the $6.5 million necessary for the project. Dr. Ruthven pointed out that the project will encompass not only the constructive uses of atomic energy, but will explore the impact of such uses on society. (Evidence of this fresh and wholly constructive approach to atomic energy problems, being taken by the "Phoenix" project, is the grant (above) to study legislative action on atomic energy development. This marks the first time a University has enabled a political scientist to interest himself in the basic structure of United States' atomic energy policy.)

If true progress is to be made in constructive uses of atomic energy, the Federal government should open the field to private industry, Farrington Daniels told the Chicago section of the American Chemical Society recently. Prof. Daniels, now chairman of the board of governors of Argonne National Laboratory, Chicago, said absolute government control of uranium bars all private enterprise from the picture. He advocated a change in policy to make more complete use of natural and human resources. It is his belief, he asserted, that there are scientists, engineers, and industrial companies in the U. S., not now engaged in the atomic energy program, who would, if given the opportunity, effectively develop pilot plants and full-scale plants for the use of atomic power in the generation of industrial electricity.

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AT THE ATOMIC CITIES & CENTERS IN THE UNITED STATES...

OAK RIDGE, Tennessee- Basic and advanced training in nuclear reactor theory and technology is now being given here by the National Laboratory at its School of Reactor Technology. The 43 enrolled students came from such organizations as Bendix Aviation Corp.; General Electric Co.; Westinghouse Electric Corp.; and Electric Boat Co., as well as from the U. S. Air Force, Bureau of Aeronautics, and Bureau of Ships. Approximately one-half of the group were recent university graduates. Primarily for engineers who will be actively engaged in the AEC's reactor development program, the school is headed by Dr. F. C. Von der Lage.

LOS ALAMOS, New Mexico- As part of a general survey of rents and real estate valuations at the U. S.'s "atomic cities", John C. Tredwell, of New York, and George Goldstein, of Newark, are conducting a real estate survey and appraisal of the community here. Utility rates and other services will also be examined by Tredwell and Goldstein.

ARCO, Idaho- Electrical sub-stations for the materials testing reactor, the submarine thermal reactor, and a site at Scoville (an intermediate station in the electrical network which will supply this reactor testing station), are to be erected here by Fonnesbeck Electric Co., Idaho Falls, Idaho, under a recently awarded contract. The sub-stations will be of 138-kilovolt capacity. Fonnesbeck's bid of $313,522.75 was the lowest of five received by the Commission here.....Contract for construction of a plant to generate process and heating steam, at the station here, has been awarded to Paul W. Larsen, Inc., Salt Lake City. The contract includes construction of a building to house, besides the steam plant, air compressors, air dryers, and a 600-kilowatt diesel electrical generating set.

KNOLLS ATOMIC POWER LABORATORY, Schenectady, N.Y.- Commenting on the zero power reactor, or preliminary pile assembly, which has been used as a research tool here since April, 1948, Dr. Kenneth H. Kingdom, technical manager of this General Electric-operated laboratory, said the PPA has given the first demonstration of a new method for control of a nuclear reaction. It is particularly adapted to reactors of the power-breeder type. Dr. Kingdom said the method has worked very well, and work is now at the stage of testing a completely automatic control for a nuclear reactor.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear energy field...

Control of Radiation Hazards in Atomic Energy Program. The report (8th semi-annual) to Congress by the U. S. Atomic Energy Commission of accomplishments in the U.S. in atomic energy for the first six months of 1950; major portion of report concerns radiation hazards and their control. 230 pages -- Superintendent of Documents, Washington 25, D. C. (55¢)

United States Civil Defense. Prepared by the Office of Civilian Mobilization (OCM) of the National Security Resources Board. Civil defense against radiological, and other modern agents of warfare. Covers policy and responsibility for civil defense; its organization, control and training ; financing; fire, health and welfare agencies; rescue operations, and other aspects in both possible target area and surrounding territories. 175 pages.-- Superintendent of Documents, Washington 25, D.C. (25¢)

International Control of Atomic Energy. Work of the United Nation's Atomic Energy Commission during the UN's fourth session. 37 pages. -- Columbia University Press, 2960 Broadway, New York 27. (30¢)

Recommended Practice for Radiographic Testing. An expansion of material formerly included in the now withdrawn methods of radiographic testing, No. E-15. --American Society for Testing Materials, 1916 Race St., Philadelphia, Pa. (50¢)

Security Clearance Procedures in the U. S. Atomic Energy Program. A revised procedure for conducting security clearance hearings of persons engaged in atomic energy work. Published in the Federal Register dated September 19, 1950. Single copy of this issue of the Register may be obtained from Superintendent of Documents, Washington 25, D.C. (15¢)

Pattern for Survival. A two reel motion picture, considering the problem of survival under atomic attack. --Cornell Film Company, 1501 B'way, N.Y., N.Y.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear work...

FROM THE MANUFACTURERS - Sealed thallium-activated sodium iodide crystals for detection of beta and gamma radiation. Model NRS-21 for use with RCA 931-A and 1P21 photomultiplier tubes; size ½"x5/8"x2". Model NRS-10, for RCA 5819 photomultiplier tubes; size 1¾" x ½". -- Nuclear Research Corp., 112 S. 16th St., Philadelphia, Pa.

Model SC-16 windowless flow counter is a low background radiation counter designed for operation in either the Geiger or proportional regions. Essentially, it is a shielded counter tube, into which solid samples are inserted directly, and through which a constant gas flow is maintained to prevent air contamination. The absence of any window between the sample and the counting chamber makes this instrument particularly useful for the detection and measurement of alpha radiation, and of weak beta radiation, such as that emitted by carbon-14 and sulfur-35.....Model SC-15 pulse amplifier is a simplified, non-microphonic pulse amplifier, primarily designed to amplify the pulses from a Geiger counter or flow counter operating in the proportional region. Intended for use with preamplifier, which is included as standard equipment with the SC-15.--Tracerlab, Inc., 130 High St., Boston 10, Mass.

INSTRUMENT DEVELOPMENT- A radiation dosimeter which indicates radiation quantitatively by means of color changes, was one of the instruments discussed at the recent three-day symposium at the Army Chemical Center, Md. (The symposium, primarily concerned with detection of ionizing radiation by chemical means, was sponsored jointly by the AEC and the Department of Defense.) In reporting on this colorimetric instrument, G. V. Taplin, of the University of California at Los Angeles, pointed out that its operation is based on the fact that chloroform, under the influence of radiation, is partially converted to hydrochloric and related acids; the amount of acid formed is dependent on the intensity of radiation. Thus, by employing a suitable dyestuff indicator, the amount of radiation can be determined colorimetrically. Taplin said the most successful apparatus developed (under this UCLA project) consists of small sealed tubes containing chloroform and an overlay of dyestuff. This, he stated, was found to be more heat stable than solutions of the dyestuff in the chloroform. Small amounts of alcohol, in the chloroform, which inhibit acid formation, are utilized in preparing tubes which are exposed to large dosages of gamma radiation; otherwise, these heavy doses tend to destroy the color of the dyestuff. Main object of this project is to develop dosimeters for such uses as personnel casualty badges, and area monitoring devices.

The symposium (above) also heard of work done by E. H. Land, and W. A. Shurcliff, Polaroid Corp., on self-developing film badges. A. M. Moos, of Patterson, Moos and Co., Long Island, described the Chemical Corps' radiation dosimeter. A conductimetric dosimeter, which uses no electrodes, was discussed by John Kanwisher, who has been undertaking work on this device at the University of Rochester's Medical School.

Ethyl formate has been found a very good alternative to replace ethyl alcohol used in self-quenching Geiger-Muller counters, in work done by R. O. Jenkins, and R. W. Taylor, of the Research Laboratories, General Electric Co., Ltd., Wembley, England. Jenkins and Taylor found (using ethyl formate) that the initial plateaus obtained are flatter than with alcohol; the life is comparable; counting efficiency similar; and, from the values of saturated vapor pressure, tubes should be operable down to at least -10 deg. C. Most of their experiments were done with 98% pure argon as the permanent gas, and with nickel, aluminum, and soda-lime glass as cathode surfaces.

NEWS & NOTES- Nuclear Instrument & Chemical Co., Chicago, have now received a contract from the AEC for thirty-five new models of a neutron-flux indicator which Nuclear had previously supplied the Commission. The new models will incorporate improvements in design and construction.

High Voltage Engineering Corporation, Cambridge, Mass., has appointed Dr. Homer F. Priest, research chemist (Ph. D., MIT), as executive assistant to the president of that Company.

IONIZING RADIATION...investigations & notes...

A study of the effects of x-rays on the size of yeast cells has been made by Kirkland E. Brace, Institute of Radiobiology and Biophysics, University of Chicago. His work was concerned with the increase in size which occurs upon such irradiation; it was attempted to determine whether this increased size is selective, or non-selective. In the experimental work, yeast cells were exposed to 20,000 r of x-rays, and cultured in a liquid medium. It was observed that they, and their descendents, attained a mean cell volume more than twice that of cells derived from non-irradiated controls. Since there were no corresponding differences in specific gravity and nitrogen content per unit of cell volume, it was concluded that enlargement of yeast cells after irradiation was largely a non-selective increase in cell constituents, rather than a swelling due mostly to uptake of water.

Using phosphorous-32 alone; phosphorous-32 with roentgen-ray radiation; and phosphorous-32 with other chemotherapeutic agents, palliative treatment of lymphatic leukemia has been underway for the past 9 years at the Memorial Center for Cancer and Allied Diseases (Memorial Hospital) New York City. H. D. Diamond, L. F. Craver, and Helen Q. Woodard recently reported on this work at the Memorial Hospital. They feel that as a result of 9 years use of these agents, and observation of their effects on 71 patients who were treated in that time that comfortable and useful life has been prolonged by means of them. (Because of the facility of ease of handling, and preparation; minimal exposure of personnel; and ease of self-administration by the patient, they suggest that the oral route of P-32 therapy is more economical and practical than the intravenous route.)

ATOMIC PATENT DIGEST...latest U. S. applications & grants...

Shielding method and apparatus for radioactive borehole logging. Comprises a measuring system, sensitive to radioactivity, and adapted to be lowered within the borehole; a shield mounted adjacent the said system, so as to be traversed by rays emanating from material within the borehole, with the shield having portions facilitating the entrance of rays originating at some distance from it, and having other portions restricting the entrance of rays from material close to the shield. U. S. Pat. No. 2,522,522, issued Sept. 19, 1950; assigned to Schlumberger Well Surveying Corp., Houston, Texas.

Geiger-Muller counter. Comprising a cathode, and a pair of bushing tubes in axial alignment with it. Certain of the metallic bands, which are deposited on the bushings, are sealed to the cathode, while a selected band is sealed to a grid cap mounted on one of the bushings. A wire assembly is carried by the bushings, while means are provided to couple conductors to the grid cap and the cathode. U. S. Pat. No. 2,522,902, issued Sept. 19, 1950, to Morris H. Shamos, New York, N.Y.

A low inductance, variable resistance filter unit, comprising a non-conductive base plate, an arcuately shaped layer of homogenous, solid resistive material on the outer surface of a hollow non-conductive cylinder, and an arcuately shaped layer of a highly conductive material on the inner surface of this cylinder. This forms a relatively large, uniformly distributed fixed capacitance. U. S. Pat. No. 2,523,856, issued Sept. 26, 1950; assigned to the United States of America (USAEC).

High-voltage generator circuits. (An x-ray system). Comprises an x-ray tube, having at least a cathode and an anode, and means electrically associated with the tube to produce a high negative potential surge and a high positive potential surge at said cathode and anode respectively. U. S. Pat. No. 2,524,240, issued Oct. 3, 1950; assigned to United States of America (USAEC).

Neutron velocity selector. Alternately blocking and permitting to pass a neutron stream, by using several superposed, alternate laminations of sheet material having high neutron capture capabilities, and sheet material having low neutron capture capabilities. Neutrons are detected, and counted, for predetermined periods of time. U. S. Pat. No. 2,524,379, issued Oct. 3, 1950; assigned to United States of America (USAEC).

RAW MATERIALS...radioactive ores & other essentials for nuclear work...

UNITED STATES- Montana- Elkhorn Mining Co. have located high uranium-silver values at their Free Enterprise property near Boulder, Wade V. Lewis, Elkhorn president has announced. He said that in workings near the 100-foot level, uranium oxide content of the ore had assayed up to 18.78%.....Colorado- Uranium minerals have been reported from Placerville, in the San Miguel region, with assays ranging from 1% to 8%, in uranium oxide content. However, occurrences have been with high lime content; this will result in mill deductions for lime.....Arizona- F. A. Sitton recently stated that uranium ore of very good grade is being shipped from his lease in the Lukachukai mountains, which is being worked by Minerals Engineering Co., of Grand Junction, Colo. Sitton said that in July, of this year, 1,100 tons of uranium ores were shipped. Additional exploration, by diamond drilling, is underway at this property, under supervision of the U. S. Geological Survey.

CANADA- Radioactive occurrences on the 6 1/4-square mile concession of Rix-Athabasca Uranium Mines, at Lake Athabaska, now total 150, the Company has reported. Of this total, 40 are considered to have sufficient possibilities from an economic standpoint to warrant follow-up work.....At the south group of claims of Roche Long Lac, in the Montreal river area, a new radioactive dike shows considerable promise, P. J. Roche, Company president has stated. On the north Roche group, visible pitchblende has been uncovered, along a wide shearing in the Roche dike.....An option has been taken by Ranwick Uranium Mines on the Breton group, near Point aux Mines, south of Camray Mines, and on the east shore of Lake Superior, north of Sault Ste. Marie. Pitchblende has been reported in several places on the property.

AUSTRALIA- A radioactive mineral find, described as of some size, has been reported from the northern territory of Australia. The find was said to have been made on the banks of the Ferguson river, near Katherine, 200 miles south of Darwin.

BRAZIL- Exports of monazite sands from this country have now been prohibited by the Export-Import License Control Authority. The action, which had been expected for some time (AEN 7/18/50, p. 5), follows the export ban of India, on monazite sands. (Geologists rate Brazilian & Indian monazite as the world's two richest sources of thorium, of considerable interest in atomic energy work.)

ITALY- Deposits of radioactive minerals have reportedly been found at Chiusa di Pesio, close to the Italian-French border. Italian government geologists are examining the deposits, which are said to contain substantial amounts of uranium ore.

CZECHOSLOVAKIA- Important new uranium ore deposits have been discovered by Soviet and Czech geologists, according to an observer in Vienna. Output of pitchblende is now estimated to be 100 tons per day from the deposits, which are near the village of Mnisek Pod Brdy, about 20 miles south of Prague.

GREAT BRITAIN- Preliminary figures, for the year ended July 31st, for Tanganyika Concessions, shows profit (subject to U.K. taxation) of £ 1,015,333. This compares with the Company's previous year's profit of £ 863,244. Chief items comprising Tanganyika's revenues are dividends and royalty received from Union Miniere du Haut-Katanga, and certain profit from Benguela Railway debentures. (Tanganyika has a large interest in Union Miniere, which operates the Shinkolobwe pitchblende pits of the Belgian Congo, main source of U.S.'s uranium ore, and it controls the Benguela Railway, over which products of the mine are hauled to the Atlantic coast of Africa.)

Sincerely,

The Staff,
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